Australian Government

UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations

Release: 1

UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to verify the functionality and compliance of refrigeration and air conditioning installations.

It includes testing and visual inspection for verifying that a refrigeration and air conditioning system and components are safe and complies with requirements and functions as intended. It also includes working safely, conducting compliance tests, conducting visual inspections, identifying non-compliance defects and completing mandatory reporting requirements. Individuals will typically work remotely without direct supervision or as part of a commissioning, service or maintenance team.

To undertake this unit, the learner must have a Trainee Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted.

The skills and knowledge described in this unit require a national Refrigerant Handling Licence as it includes work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted while decanting the refrigerant or manufacturing, installing, commissioning, servicing, maintaining or decommissioning refrigeration and air conditioning equipment.

The skills and knowledge described in this unit require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 V alternating current (a.c.) or 120 V direct current (d.c.).

Competency development activities in this unit are subject to regulations directly related to licensing. Where a licence or permit to practice is not held, skills and knowledge described in this unit require a relevant contract of training, such as an Australian Apprenticeship.

Additional and/or other conditions may apply in some jurisdictions subject to regulations related to refrigeration, air conditioning or electrical work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

Those holding the Full Refrigeration and Air Conditioning Refrigerant Handling Licence issued by the Australian Refrigeration Council, or a Certificate III in Refrigeration and Air-conditioning trade qualification or equivalent meet the requirements of this unit and its prerequisite requirements.

Permits may also be required for some work environments, such as confined spaces, working aloft, near live electrical apparatus and site rehabilitation.

Pre-requisite Unit

UEECO0010 Participate in refrigeration and air conditioning work and competency development activities

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0042 Solve problems in ELV single path circuits

UEECD0020 Fix and secure electrotechnology equipment

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work

UEERA0044 Find and rectify faults in single phase motors and associated controls

UEERA0045 Find and rectify faults in three phase motors and associated controls

UEERA0059 Prepare and connect refrigerant tubing and fittings

UEERA0036 Establish the basic operating conditions of vapour compression systems

UEERA0035 Establish the basic operating conditions of air conditioning systems

UEERA0050 Install refrigerant pipe work, flow controls and accessories

UEERA0081 Select refrigerant piping, accessories and associated controls

UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems

UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits

UEERA0079 Safely handle refrigerants and lubricants

UEERA0062 Recover and charge refrigerants

UEERA0053 Install, commission, service and maintain medium temperature systems

UEERA0052 Install, commission, service and maintain low temperature systems

UEERA0051 Install, commission, service and maintain air conditioning systems

UEERE0001 Apply environmentally and sustainable procedures in the energy sector

UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring

UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures

UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply

UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c.

Competency Field

Refrigeration and air-conditioning

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1 Prepare to verify refrigeration and air conditioning installation	**1.1** WHS/OHS hazards, risk control methods, relevant standards, codes and legislation are obtained and applied
	1.2 Safety hazards which have not previously been identified are noted on job safety assessment and established risk control measures implemented
	1.3 Appropriate person/s is consulted to ensure the verification work is coordinated effectively with others involved on the worksite
	1.4 Location of refrigeration and air conditioning system components are determined from specifications and diagrams
	1.5 Refrigeration and air conditioning inspection and tests are appropriately sequenced in accordance with job schedule
	1.6 Materials needed for the tests and verification are obtained in accordance with workplace procedures and checked against job requirements
	1.7 Tools, equipment and testing devices needed to verify compliance are obtained in accordance with workplace procedures and checked for correct operation and safety
2 Visually inspect the refrigeration and air conditioning installation	**2.1** Circuits/machines/plant are checked and isolated in accordance with WHS/OHS requirements and workplace procedures

	2.2	Pipe work is checked for appropriate type and size
	2.3	Pipe work accessories and components are validated as being suitably located, securely fixed and suitably protected from damage or corrosion
	2.4	Refrigeration and air conditioning system components and accessories are validated as being appropriately rated in accordance with manufacturer and design specifications
	2.5	Evidence that equipment complies with safety and functional requirements is cited in accordance with workplace procedures
	2.6	Unexpected situations are responded to in a manner that minimises risk to personnel and equipment, discussed with appropriate person/s and documented in accordance with workplace procedures
	2.7	Visual inspection is carried out efficiently without waste of materials, damage to or contamination of apparatus and the surrounding environment or services using sustainable energy practices
3 Conduct refrigeration and air conditioning compliance tests	**3.1**	Testing or measuring on live electrical work and operating system is conducted in accordance with WHS/OHS requirements and workplace safety procedures
	3.2	Circuits/machines/plant are checked and isolated in accordance with WHS/OHS requirements and workplace procedures
	3.3	Electrical tests are conducted to verify that the electrical circuit within the refrigeration and air conditioning installation is safe and functions as intended
	3.4	Refrigeration and air conditioning tests are conducted to verify that the refrigeration equipment and pipe work within the refrigeration installation is safe and functions as intended
	3.5	Unexpected situations are responded in a manner that minimises risk to personnel and equipment, discussed with appropriate person/s and documented in accordance with workplace procedures
	3.6	Refrigeration/air conditioning testing is carried out

		efficiently without waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy practices
4 Report refrigeration and air conditioning inspection and verification findings	**4.1**	Worksite and equipment are cleaned and made safe in accordance with established procedures
	4.2	Non-compliance defects are identified and reported in accordance with workplace procedures
	4.3	Recommendations for rectifying defects are made in accordance with workplace procedures
	4.4	Work completion is documented and appropriate person/s notified in accordance with workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Inspecting, testing and verifying the functionality and compliance of refrigeration and air conditioning systems must include at least two of the following systems:

- cool rooms/freezer rooms
- merchandising and display cabinets
- residential air conditioning
- package air conditioning

Verification must include conducting the following:

- visual inspections of the system, components, pipe work controls and accessories
- electrical tests, including isolation, testing of insulation resistance of equipment, resistance of the internal circuits of equipment, polarity of supply and equipment, continuity of earthing, and correct electrical connections and load current
- refrigeration tests, including pressure

	testing, leak testing, evacuation testing, controls tests, refrigerant charge, and operating pressures and temperatures

Unit Mapping Information

This unit replaces and is equivalent to UEENEEJ109A Verify functionality and compliance of refrigeration and air conditioning installations.

Links

Companion Volume implementation guides are found in VETNet - - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6